



State of Illinois

# ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

P. O. Box 19506, Springfield, IL 62794-9506

217/782-2113

## OPERATING PERMIT FOR SMALLER SOURCE

### PERMITTEE

Agri-Fine Corporation  
Attention: Mike Hoelzeman  
3701 E. 100th Street  
Chicago, Illinois 60617

Application No: 86050044

Applicants Designation: AGRI-FINE

Subject: Soybean Soapstock Acidulation

Date Issued: May 10, 1996

Location: 3701 E. 100th Street, Chicago

I.D. No.: 031600FDK

Date Received: March 4, 1996

Expiration Date: See Condition 1

RECEIVED  
MAYWOOD OFFICE

MAY 15 1996

DEPT. OF ENVIRONMENTAL PROTECTION  
STATE OF ILLINOIS

Permit is hereby granted to the above-designated Permittee to OPERATE emission source(s) and/or air pollution control equipment consisting of a scrubber for soapstock acidulation process and two natural gas fired steam generators as described in the above referenced application. This Permit is subject to standard conditions attached hereto and the following special condition(s):

1. This Permit shall expire 180 days after the Agency sends a written request for the renewal of this Permit, unless the Permit is withdrawn or is superseded by a revised Permit.
2. Emissions of sulfur dioxide and hydrogen sulfide shall not exceed 0.6 and 0.3 tons/year, respectively. These limits are based on the maximum emission rate (0.3 lb/hr sulfur dioxide and 0.16 lb/hr hydrogen sulfide) and the maximum hours of operation (5,824 hr/yr).
3. Emissions and operation of equipment shall not exceed the following limits:

<u>Item of Equipment</u>	<u>Natural Gas Consumption (mmscf/Year)</u>	<u>NOx Emissions</u>		<u>CO Emissions</u>	
		<u>Lb/Hour</u>	<u>Ton/Yr</u>	<u>Lb/Hour</u>	<u>Ton/Yr</u>
8.4 mmBTU/hr Boiler	31.5	0.84	1.57	0.18	.033
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These limits are based on standard emission factors (100 lb NOx/million scf and 21 lb CO/million scf), maximum firing rates of the boilers (8.4 mmBTU/hr), and maximum operating time (3,744 hours/year). Conversion factors used were 1,000 Btu/scf, 1 Therm/100,000 Btu, and 2,000 lb/ton. Compliance with annual limits shall be determined from a running total of 12 months of natural gas usage.

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If you have any questions on this, please call Brian Rodely at 217/782-2113.

Donald E. Sutton, P.E.  
Manager, Permit Section  
Division of Air Pollution Control

DES:BER:ber

CC: Region 1

COPY  
Original Signed by  
Donald E. Sutton, P.E.

## Calculation Sheet

**Facility:** Agri-Fine Corporation

**LD.:** 031600FDK

**P.N.:** 86050044

**Date Received:** 03/04/96

**Anal. Eng.:** BER

**Date Reviewed:** 05/10/96

**County:** Cook

**Flags:** No toxic screening required-JMS

**Application Statement:** Applicant is requesting a permit renewal and smaller source status for a soybean soapstock acidulation process.

**Contact Person:** Nina Hoelzeman 312/978-5130

Not Subject to NSPS or NESHAP

Emissions include Hydrogen Sulfide which is an ITAC.

There is no change in the operation since the last permit was renewed.

**Soybean Acidulation Process:** controlled by a scrubber to reduce SO<sub>2</sub> emissions 90%.

Operating Hours=5824 hours/year

Emissions: 0.3 lb/hr sulfur dioxide, 0.16 lb/hr hydrogen sulfide.

### **2 Identical natural gas fired boilers:**

Operating Hours=12\*6\*52=3744 hours/year

Emissions:

#### **Natural gas/oil consumption**

Gas / Oil fired gas

Operating Hours

3744

AP-42

Equipment  
Name

Firing  
Rate  
(mm Btu/hr)

Annual  
Consumption  
(mmscf/yr)

Emission  
Factor  
(#/mmscf)

Particulate Matter Emissions  
Proposed Production PTE  
(#/hour) (Ton/yr) (Ton/yr)

boiler

8,4000

31.45

12

0.10

0.19

0.44

Potential fuel consumption  
(mmscf/yr)

73.58

Emission  
Factor  
(#/mmscf)

Carbon Monoxide Emissions  
Proposed Production PTE  
(#/hour) (Ton/yr) (Ton/yr)

21

0.18

0.33

0.77

Emission  
Factor  
(#/mmscf)

Nitrogen Oxide Emissions  
Proposed Production PTE  
(#/hour) (Ton/yr) (Ton/yr)

100

0.84

1.57

3.68

Emission  
Factor  
(#/mmscf)

Volatile Organic Material Emissions  
Proposed Production PTE  
(#/hour) (Ton/yr) (Ton/yr)

3.83

0.03

0.06

0.14

Emission  
Factor  
(#/mmscf)

Sulfur Dioxide Emissions  
Proposed Production PTE  
(#/hour) (Ton/yr) (Ton/yr)

0.6

0.01

0.01

0.02

**Emissions:**

PTE of the facility for all pollutants=11.41 ton/year.

Smaller source program is applicable. Allowable emissions coded in EIS total 4.65 tons/year.

EIS requires no updating.

Recommend granting smaller source permit with limitations on emissions of SO<sub>2</sub>, hydrogen sulfide and boiler use.



# ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601, 312-814-6026

ROD R. BLAGOJEVICH, GOVERNOR

RENEE CIPRIANO, DIRECTOR

## TIER II INSPECTION

**Date:** March 22, 2005 **Date of Inspection:** Feb 16, 2005  
**To:** Ed Bakowski **Last Inspection Date:** July 13, 2000  
**From:** Joseph Kotas **ID#:** 031 600 FDK  
**Source:** Agri-Fine Corp. **R/D:** 1/ 117  
**Address:** 2701 E. 100<sup>th</sup> St. **SIC#:** 2048  
**City/Zip:** Chicago, IL 60617  
**Contact/Title:** Jerry Lannom, Plant Supervisor **Tel No.:** 773-978-5130  
**Purpose of Inspection:** FY-05 Workplan-Agricultural Products

### PERMIT(S):

<u>Permit No.</u>	<u>Type</u>	<u>Issued</u>	<u>Expires</u>	<u>Unit</u>
86050044	Lifetime	05/10/96	N/A	Soybean Soapstock Acidulation

### 1.0 Source/Process Description

Agri-Fine Corp. processes corn and/or soybean soapstock into oil for the poultry and livestock feeding industry. The soapstock is approximately 60% water and 40% oil. The process of acidulation is used to release the oil from the emulsified mixture. Sulfuric acid is added to large wooden tanks and the mixture is heated to 200 degrees F for approximately two hours to liberate the oil. The batch is allowed to settle overnight and the oil separates from the water. (There is also an "interface" layer of emulsified oil and water.) the next morning the top layer of oil is pumped to storage and the bottom layer of acid-water is pumped to a water treatment system where it is skimmed to remove any remaining oil and neutralized with caustic before exiting to the sanitary sewer. The finished oil is then sold to the poultry and livestock industry.

Agri-Fine operates two 8.4 mmBtu/hr Clayton steam generators for process steam.

### 2.0 Non-Compliance History

No recent non-compliance issues.

### 3.0 Miscellaneous Information

a) Fugitive Dust Program: Date Submitted: 05/07/86 Accepted x

b) Section 9(a) Factors

No recent complaints. In the early 1990s, the facility was involved with the USEPA regarding odor complaints. Agri-Fine subsequently installed an odor control system.

c) Attainment/Non-Attainment

Located in an area designated non-attainment for ozone (severe) and PM-10 (moderate).

d) AER Date of last submission: 04/30/04

e) Stack Test Performed? \_\_\_\_\_ Yes x No

f) CEM on site? \_\_\_\_\_ Yes x No

g) Annual Plant Wide Emissions

	<u>2003/TPY</u>
Part.	0.1
PM10	0.1
NO <sub>x</sub>	1.06
SO <sub>2</sub>	0.414
CO	0.214
VOC	0

h) Other/Miscellaneous Issues

None.

### 4.0 Inspection Narrative

#### 02/16/05 J.Kotas:

An unannounced inspection was conducted according to annual workplan requirements under the category of Agricultural Products. Jerry Lannom, Plant Supervisor was the contact. Operations were typical today and the scrubber was in full operation. The fan was effectively pulling acid fumes through the stainless steel ducts. Lannom described the maintenance and operation of the scrubber system. Ph is maintained on the scrubbant and a deodorizer added. The system operates at 15 psi and pH is monitored on a daily basis. The system is overhauled twice each year. Maintenance of the air pollution control system

seemed adequate. We observed the acidulation process. Currently, they are processing about one rail car (24,000 gallons) per day of soapstock. Their operations can vary widely with supply and demand.

The two steam generators were observed. These were tested in November 2004 and found to be operating at 28% and 79% efficiency with acceptable levels of CO. No visible emissions were observed from either the scrubber or the steam generators. Odors did not seem obvious. Appropriate logs and records are kept. They burned 11.5 scfm of natural gas in 2004 in compliance with the 63.0 scfm total allowed.

The source is in compliance with applicable regulations and conditions of their valid lifetime permit.

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**5.0 Conclusions/Recommendations/Other Comments**

**02/16/05 J.Kotas:**

An unannounced inspection was conducted according to annual workplan requirements under the category of Agricultural Products. The facility was observed in operation. No air pollution related deficiencies were observed, nor were there any objectionable odors detected. The source is in compliance with applicable regulations and conditions of their valid lifetime permit.

Attachments? \_\_\_\_\_ Yes   x   No

jk/jk

cc: Ed Bakowski/Central File/BOA  
BOA DesPlaines Regional File